OLDMAN WATERSHED COUNCIL
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July 8, 2021

Ron Wallace, Ph.D.
Chair, Coal Policy Committee
energy.coalpolicy@gov.ab.ca

Re: Submission for Coal Policy Engagement

Dear Dr. Wallace and the Coal Policy Committee,
Thank you for your service leading this vital engagement process, and for the opportunity to share information with you. We believe that public involvement is the key to building trust in regulatory processes, and is critical to a well functioning democracy.

It is our understanding that you are receiving scientific and technical advice from topical experts and so we have kept our scientific analysis to a minimum. Our focus is on the implications that coal mining could have on the watershed and we are pleased to provide the information and recommendations summarized below.

We recognize there are important economic and social implications as well, but that is not our area of expertise, and it is our understanding that others will cover those areas.

We look forward to meeting with you to discuss our feedback and recommendations. Thank you for your consideration.

Sincerely,

Doug Kaupp, MBA, P.Eng.
Chair of the Board

Executive Summary

The Oldman Watershed Council is a collaborative forum for all voices, working together for watershed health through education, action and stewardship. The OWC does not take positions on development projects, but provides information and analysis so that informed choices can be made based on the best available science, traditional ecological knowledge, and goals of the community. We have been sharing information publicly, and with government decision makers, and we have been listening to stakeholders. The primary concern we have been hearing is the need to protect water.

The Eastern Slopes of the Rocky Mountains are the headwaters for most of Alberta, and their importance cannot be overstated. The headwaters of the Oldman watershed are a small area, only about 25km wide, but provide about 90% of the water in the Oldman River, through many tributaries. The mountains are sacred to Indigenous People, who continue to use the area for ceremonies, spiritual renewal, and gathering and hunting food. The headwaters are treasured by all Albertans, and support our economy and our communities.

In 2014 we completed the Oldman Watershed Headwaters Indicator Project, which included an assessment of watershed integrity and found that only 5% of the headwaters of the Oldman watershed have high watershed integrity, which clearly illustrates the high pressure the area is already under. Adding new coal mines to the area would add additional pressure to an already busy landscape that is already at risk from multiple uses.

Recommendations to Maintain and Improve Watershed Health:

1. A fulsome cumulative effects assessment is needed to better identify and quantify the potential impacts of coal mines on the landscape, and to take into account that the headwaters are already impacted by existing land uses.
2. Ensure coal mine companies adhere to the linear footprint density limits (and spatial human footprint thresholds once developed) within the Livingstone and Porcupine Hills Land Footprint Management Plan.
3. Prior to coal mine approval, ensure selenium (and other contaminants) can be successfully removed from wastewater and will not contaminate natural water bodies, by requiring further scientific research and validation on the effectiveness of water quality treatment over the life of a coal mine (15-25 years), and after mine closure.
4. In case of unforeseen challenges with wastewater treatment, a modelling exercise should be completed to illustrate what selenium levels could be under various scenarios, and how far downstream contamination could travel.
5. Regulations should be changed to ensure impoundment structures are designed, engineered and installed to withstand enormous precipitation and melting events, well above historical records as climate change is anticipated to cause more extreme weather events.
6. Do not allow coal mining in subwatersheds where it will harm endangered native fish species or their critical habitat (as per the Species at Risk Act).
7. Complete instream flow needs assessments for all streams that may be dewatered, and ensure coal mines do not withdraw more than the aquatic ecosystem can sustain while remaining healthy (as determined by the assessment).
8. Coal mine companies should be required to develop climate change preparedness plans that include planning for multi-year drought.
9. Impact Assessments should detail the project's greenhouse gas emissions and strategies to minimize and/or eliminate them.
10. Groundwater monitoring and response plans must be scientifically valid, and establish a baseline, so that possible contaminants are detected and addressed quickly.
11. Protect critical wildlife habitat and corridors, and endangered ecosystems from coal development (locate mines in areas that are not critical to wildlife, or part of an endangered ecosystem).

12. Begin to incorporate ecosystem accounting into our financial systems and Impact Assessments.

Recommendation to Eliminate Risks to Other Water Users and Sectors:

13. Research, mine-scale testing, and stream monitoring must prove that coal mine wastewater treatment is effective for the long term (15-25 year life of a mine plus for decades after mine closure) before mining is approved, to ensure the water supply for municipalities and agriculture downstream will not be contaminated.
14. Evaluate Alberta's potential reputational risks and lost opportunity costs of approving new coal mines, and use the results of the evaluation to assist with determining a new Coal Policy.

Recommendations for the 1976 Coal Development Policy for Alberta:

15. Retain the many environmental protections within the policy, and add new sections to facilitate the recommendations provided above.
16. Improve:
    - Public participation in the regulatory process;
    - Language to commit to a transparent, inclusive, accountable, and easily accessible regulatory system;
    - Security deposits for reclamation;
    - Land classification categories to reflect a robust cumulative effects assessment; and;
    - Regulations related to habitat offsetting.
17. Eliminate outdated process information and replace it with the new process, and highlight opportunities for public participation.

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1. What is your organization's background, experience and interest in relation to potential coal exploration and development in Alberta?

About the Oldman Watershed Council

The Oldman Watershed Council is a collaborative forum for all voices, working together for watershed health through education, action and stewardship. The OWC Board of Directors is made up of stakeholders from all sectors, including First Nations, provincial and federal governments, municipalities, agriculture, irrigation, health, industry, environmental nonprofits, academia, and community members at large.

Our goal on this topic is to provide scientific information about the potential impacts on the health of the watershed, and the views of our stakeholders to decision makers so that the voice of the local community is heard. The OWC does not take positions on development projects, but provides information and analysis so that informed choices can be made based on the best available science, traditional knowledge, and goals of the community.

The OWC and Coal

The Oldman watershed is at the centre of the debate about coal mining along the Eastern Slopes of the Rocky Mountains, with two proposed open pit mines currently undergoing regulatory review, and two more being explored.

Through presentations, blogs, media interviews and meetings, the OWC has been providing information about the regulatory process, opportunities for public input, as well as neutral scientific information about the potential impacts of coal mining on the watershed and other sectors. We participated in the public hearings for the Grassy Mountain Coal Project as a partial participant, providing a written submission and oral presentation to the Joint Review Panel.

We acknowledge that there would be both positive and negative impacts of coal mining on our communities. While the OWC plays a significant role in stewarding our watershed, it is up to the government and elected decision-makers to make these tough decisions. Our job is to provide them with information so that the decisions made are based on science, data, and broad community feedback.

What We Are Hearing

We have heard a number of concerns and desires regarding coal mining in the province, each of which reflects our regional diversity and how strongly people value watershed health. Among these concerns are environmental degradation and habitat loss; water pollution; the desire to see reliable, long-term green jobs that take advantage of the natural values of the Rocky Mountains; an aversion to pursuing "boom and bust" economic routes; the loss of recreational opportunities; negative impacts on existing sectors, including agriculture, tourism and lifestyle amenities.

We have also heard support voiced for the jobs, new businesses, and community investments mines would bring to small towns like the Municipality of Crowsnest Pass and Town of Pincher Creek. The Government of Alberta and many others have indicated support for the economic opportunities, royalties, and tax revenues coal mines would generate. Community members have also voiced a desire to acknowledge that the metallurgical steel made from the type of coal proposed to be mined is used to construct buildings and make cars.

Economic Benefits

The OWC acknowledges that coal mining can provide financial benefits to local, regional, and provincial economies, and that this is an important consideration for the Government of Alberta. For example, Benga's Impact Assessment for the Grassy Mountain Coal Project estimates that, if approved, 385 long term jobs would be created, creating $140 million and $210 million in provincial and federal corporate income taxes, respectively. Benga estimates that $195 million

would be paid in provincial royalties over the twenty-three-year operating life of the project, with an assumption of $140/tonne average real price of coal. They also estimate $1.5 million would be paid annually in property taxes to municipal governments, which would help growing communities meet the increased demand for water and sewage services. Benga also notes that the mine would bring people to the region to work, thus growing the population and likely increasing both the number and diversity of businesses servicing the community.

The Coal Association of Canada estimates that the coal industry adds billions to the Canadian economy each year. Specific information about Southern Alberta is not yet available.

2. What are the concerns that your community or organization has about current, or future, coal developments, including positive or adverse impacts?

Impacts on the Watershed

Importance of the Headwaters

The Eastern Slopes of the Rocky Mountains are the headwaters for most of Alberta, and their importance cannot be overstated. The OWC has been focused on improving the health of the headwaters of the Oldman watershed for many years, first through developing the Headwaters Action Plan in collaboration with many sectors, and now by implementing it. We have been leading education and restoration activities in partnership with groups like Cows and Fish, Spray Lake Sawmills, Trout Unlimited Canada, the Blackfoot Confederacy, and Crowsnest Pass Quad Squad.

The headwaters of the Oldman watershed are a small area, only about 25km wide, but provide about 90% of the water in the Oldman River, through many tributaries. The mountains are sacred to Indigenous People, who continue to use the area for ceremonies, spiritual renewal, and gathering and hunting food. The headwaters are treasured by all Albertans.

The area is well used for recreation, forestry, cattle grazing, and other types of industry, and these pressures have contributed to a decline in watershed integrity. In 2014 we completed the Oldman Watershed Headwaters Indicator Project, which included an assessment of watershed integrity and found that only 5% of the headwaters of the Oldman watershed have high integrity, as shown on the map below.

Adding new coal mines to the area would add additional pressure to an already busy landscape that is facing high pressure from multiple uses.

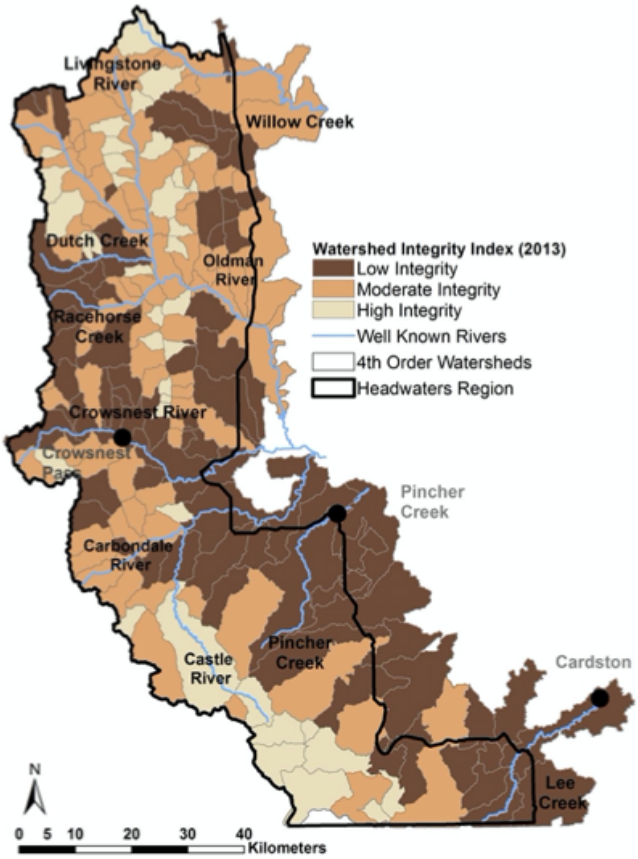

Figure 1: A watershed integrity index of the headwaters of the Oldman watershed.

Cumulative Effects

Coal mine projects are typically evaluated individually, but with two coal projects undergoing regulatory review, and two more being explored in the headwaters of the Oldman watershed, an understanding of the implications to the broader landscape is required. A fulsome cumulative effects assessment is needed to better identify and quantify the potential impacts of coal mines on the landscape, and taking into account that the headwaters are already impacted by existing land uses. The assessment should be completed for multiple scenarios, such as having one mine, two mines, three mines, etc.

Obviously having multiple mines means the potential for negative impacts on fish, wildlife, and the watershed is greater. This is why cumulative effects assessments are so important. These types of assessments look at the entire landscape and everything that is happening on it to understand what the holistic impact is on water, wildlife, habitat, and overall ecosystem function. If we only evaluate one project in one location at a time, we risk missing the bigger picture challenges.

While Impact Assessments generally include some mention of cumulative effects, they are limited in scope and analysis. A robust cumulative effects assessment would be broad in scope, include the large land base used by wildlife such as grizzly bears, and all the existing land uses, and would illustrate current and future impacts on ecosystem function.

Recommendation

- A fulsome cumulative effects assessment is needed to better identify and quantify the potential impacts of coal mines on the landscape, and to take into account that the headwaters are already impacted by existing land uses.

Linear Footprint Density

Linear footprint density (a standard measure of all the roads, trails, pipelines, etc.) is a concern in the mountains because fish and wildlife populations, as well as water quality, tend to decline as the linear footprint density increases. Many kilometres of new roads have already been built for coal exploration and more would be needed if mines become operational. New rail lines would also be required to load and transport the coal, in a region that is already above the density thresholds for healthy fish and wildlife populations.

The Alberta Energy Regulator (AER) is required to abide by the Livingstone and Porcupine Hills Land Footprint Management Plan. This plan sets limits on linear footprint density and is legally binding within the South Saskatchewan Regional Plan (SSRP) regulations. It is our understanding that Alberta Environment and Parks and the AER are working to finalize a "cumulative effects management decision-making tool" that will identify the current linear footprint density (in relation to the regulatory limits) and how newly proposed projects would impact the density.

Alberta Environment and Parks, with support from stakeholders, has made it a priority to reduce linear footprint density within the Livingstone area to conserve fish and wildlife populations, and protect water quality and ecosystem services. The OWC has set consensus based community targets within our Headwaters Action Plan to reduce linear footprint density within most of the headwaters, and minimize the impacts of them where they cannot be reduced.

Reducing linear footprint density is a critical priority in the headwaters of the Oldman watershed and coal mines will add to this problem.

Recommendation

- Ensure coal mine companies adhere to the linear footprint density limits (and spatial human footprint thresholds once developed) within the Livingstone and Porcupine Hills Land Footprint Management Plan.

Water Quality

The biggest concern regarding coal mines is the potential for contamination of our water sources. The OWC acknowledges that mining companies intend to impound waste water on-site and treat it so that it does not harm the environment. However, that is not always possible and coal developers admit that there will be water quality challenges. For example, in Benga's Impact Assessment they state that they expect 6 water quality variables to exceed guidelines at certain times for 24 years. We are concerned about these exceedances if mining is approved, and would recommend that Benga be required to find solutions in advance so that water quality is not altered.

Furthermore, because the mountains are steep and can receive heavy precipitation and snowmelt runoff, these impoundment structures can fail, as we have seen before in Northern Alberta. If they fail or are not operating as well as expected, contaminated water and sediment is released into nearby creeks and rivers. With climate change, the likelihood of severe precipitation events is even greater. Of the known issues, selenium and sediment contamination are among the most concerning in regard to water health.

Selenium

The potential for selenium contamination of waterways is our greatest concern for the watershed and all the people that depend on it. If multiple mines were to be operating at the same time, the risk that selenium concentrations may increase above safe limits in our downstream creeks and rivers is larger. If the proposed water treatment processes and impoundment structures do not perform as well as proponents state, we could have a very serious problem downstream for fish, municipalities and agriculture in the future.

The risk that water treatment efforts are likely to fail appears to be high, as we have seen across the border with British Columbia in the Elk Valley, where after decades of mining, selenium levels are exceeding safe limits and contamination has travelled far downstream. Teck Resources Limited has developed promising water treatment processes that are helping to address the problem of selenium contamination. However, the treatment processes have not been in operation for a long period of time and so scientific research is ongoing to evaluate if these methods are effective over the long term.

Closer to home in Alberta, Benga's baseline monitoring for their Impact Assessment for the Grassy Mountain Coal Project found several small streams were over the safe limit for fish and the aquatic ecosystem, and a government report shows there are also elevated levels of selenium downstream of coal mines on the McLeod and Gregg Rivers and Luscar Creek, east of Jasper. The Government of Alberta report shows the concentrations in 1998-1999 were above safe limits for fish and the aquatic ecosystem (2ug/L) , and some samples were above the safe limits for agricultural uses (20-50ug/L). Even though some of these mines are reclaimed, or in the process of being reclaimed, the selenium contamination persists. Recent scientific reports about this situation are lacking. Data needs to be analyzed and reported publicly so that Albertans can better understand the potential impacts of coal mines. Furthermore, the contamination of these streams should be addressed and those responsible held accountable.

One of the key questions is whether selenium would be diluted enough by the Oldman Reservoir to buffer the negative impacts to all those who live downstream. While we currently do not know the answer, we can look at the Koocanusa Reservoir downstream of the Teck mining complex for an indication of what we might expect. A recent study by the US Geological Survey found elevated levels of selenium and nitrates in the Kootenai River, downstream of the Koocanusa Reservoir. However, further downstream from the mine it was found that levels were much lower—sometimes even below scientific guidelines for flowing water—than they were immediately downstream of the mining complex, thanks to dilution. When considering and extrapolating this example to our situation in Alberta, it must be considered that the Koocanusa Reservoir is substantially larger than the Oldman Reservoir. Our water system also has different dynamics than that of our neighbours, so we do not know exactly how water quality downstream on the Oldman River would be affected, along with those who rely on the water for daily use, agriculture, industry, and habitat.

Recommendations

- Prior to coal mine approval, ensure selenium (and other contaminants) can be successfully removed from wastewater and will not contaminate natural water bodies, by requiring further scientific research and validation on the effectiveness of water quality treatment over the life of a coal mine (15-25 years), and after mine closure.

- In case of unforeseen challenges with wastewater treatment, a modelling exercise should be completed to illustrate what selenium levels could be under various scenarios, and how far downstream contamination could travel.

Sedimentation

The risk of sedimentation of streams is concerning in a steep mountainous environment, especially when we have seen impoundment structures fail at coal mines before. Too much sediment reduces water quality, and directly impacts fish and the entire aquatic ecosystem.

Recommendation

Regulations should be changed to ensure impoundment structures are designed, engineered and installed to withstand enormous precipitation and melting events, well above historical records as climate change is anticipated to cause more extreme weather events.

Native Fish

Even modest amounts of selenium in a river is known to cause deformities and reproductive failure in fish. In March of 2020, Teck completed a study of fish health near their work sites and found major declines in fish populations living immediately downstream of their mining operation. Some fish species, like westslope cutthroat trout and bull trout, are already at risk of extirpation from Alberta so this added challenge could be a serious problem for their survival.

Selenium is also known to cause health problems for humans, however, fish act like the "canary in the mine" as their tolerance to selenium is much lower than that of a human. Much like invertebrates in the headwaters, fish are an indicator species for water health.

Native fish already struggling to survive, like westslope cutthroat trout and bull trout, would have to cope with additional stress. They face increasing challenges as the climate warms and adding another land use to an already busy landscape could further contribute to their decline. Native trout help keep our aquatic ecosystems functioning properly and are bio-indicators telling us whether our mountain water is cold and clear.

The OWC's Headwaters Action Plan set targets to maintain fish populations and also restore them where habitat will support long term survival. The federal Species at Risk Act prohibits harming endangered fish or their critical habitat.

Recommendation

- Do not allow coal mining in watersheds where it will harm endangered native fish species or their critical habitat.

Water Quantity

Withdrawing water from small creeks and rivers for coal mining could dramatically impact the streams being dewatered and the aquatic life living in them, and instream flow needs assessments are needed to understand the impacts of potential withdrawals. No research exists regarding the instream flow needs for the Castle, Crowsnest, Livingstone, or upper Oldman Rivers and their tributaries where coal mines may withdraw water. Native fish species that are already at risk of extirpation could be particularly impacted.

There are many considerations that have to be understood in order to determine the environmental impact. Considerations include amount, location, and timing of withdrawal; if there is return flow; what water quality targets we need to meet; existing fish habitat; species at risk present, etc. To provide meaningful and effective data, impacts must be monitored and assessed over time. We do know that smaller streams are more sensitive and vulnerable so it is critical that instream flow needs assessments are completed. We also know that streams where withdrawals are made must be monitored over time.

Our best scientific guideline to protect the aquatic ecosystem is that a maximum of 15% of a stream's natural flow can be withdrawn during normal flows before negative impacts are caused and that no water should be withdrawn during times of extreme low flow. Extreme low flows typically occur during droughts and in late summer and winter when precipitation is lower or frozen in snow and ice.

In comparison to irrigated agriculture, the amount of water potentially withdrawn for coal mining is small. However, the creeks and rivers upstream of the Oldman Reservoir are small and the impacts of even minor flow withdrawals could be significant. The impact of any withdrawal needs to be understood at the creek level. Furthermore, in dry years, where

every drop of water is of high-value, the additional withdrawals for coal mines could make a significant difference for junior license holders.

All unallocated water that is left instream is of great benefit to the natural river system and all the fish and wildlife that depend on it. Water is a stream's most valuable asset. It is also a valuable insurance policy for all downstream users. Water that is left unallocated provides a useful cushion during dry periods to ensure junior licensees do not get cut off from accessing water due to a shortage.

It is our understanding that there would be a separate engagement process before any changes are considered to the Oldman River Basin Water Allocation Order, and so we have not included our recommendations related to that specific issue in this submission.

Recommendation

- Complete instream flow needs assessments (including habitat needs for aquatic species at risk) for all streams that may be dewatered, and ensure coal mines do not withdraw more than the aquatic ecosystem can sustain while remaining healthy (as determined by the assessment).

Challenges In Dry Years

Over the past thousand years the Oldman Watershed has experienced many multi-year droughts. Some have lasted longer than a decade. If another multi-year drought occurs, some license holders would not be able to withdraw their allocation because there simply wouldn't be enough water in the river. In this scenario, junior license holders with the newest licenses lose their right to withdraw first, with older licenses getting priority. It is unclear how industrial users like coal mines would operate in a drought, especially a multi-year drought, where creek levels may be very low, and no withdrawals should be allowed.

The most recent climate change analysis has shown that the prairies of Canada are warming two- to three-times faster than the rest of Canada. We are also experiencing shifts in precipitation patterns. Currently, more precipitation is occurring in Spring and Autumn, with less in summer. Analysis of flow trends has shown a decrease in many of our upstream rivers. This means that there is less water available at the times it is most needed due to higher temperatures and levels of evaporation.

Recommendation

- Coal mine companies should be required to develop climate change preparedness plans that include planning for multi-year drought.

Climate Change

According to a recent survey, climate change is currently the number one issue for Canadians (even during a global pandemic), with 78% of Canadians indicating they are "very concerned about the negative impact of climate change on future generations." Metallurgical coal mining and processing is a large contributor of greenhouse gas emissions, and Albertans expect all sectors to play a role in finding solutions.

Recommendation

- Impact Assessments should detail the project's greenhouse gas emissions and strategies to minimize and/or eliminate them.

Groundwater

The OWC completed one of the few existing groundwater studies of the Crowsnest watershed in 2013, and our main finding was that data and monitoring is sorely lacking. Generally groundwater flows towards the Crowsnest River, and so any contamination would likely reach the river over time. Protecting groundwater is just as important as protecting surface water.

Analysis of Impact Assessments have revealed concerning issues with groundwater monitoring plans. For example, in Benga's Impact Assessment they proposed to sample groundwater monitoring wells annually, and to move them when needed to allow for mining activities. Annual sampling is not adequate to support a rapid response, and monitoring wells cannot be moved or the data is not comparable.

Recommendation

- Groundwater monitoring and response plans must be scientifically valid, and establish a baseline, so that possible contaminants are detected and addressed quickly.

Biodiversity

The headwaters of the Oldman watershed are extremely valuable for the biological diversity of plants and animals that live there. The region is home to many at-risk and keystone species including grizzly bears, bighorn sheep, mountain lions, limber and whitebark pines, fescues, and many others. There are grasslands, old growth forests and wetlands that are disappearing, and are in need of conservation and restoration. Coal mines would add to the erosion of biodiversity that is already being hailed as a global crisis. For example, Benga's Impact Assessment states that the project would remove an estimated 27 species of rare plants, 7.8 ha of shrubby open fens, 168.8 ha of old growth forest, 56.3 ha of native montane grassland, and 104.3 ha of native subalpine grasslands. Furthermore, the Cabin Ridge area which was opened for exploration has many endangered pines.

The true value of these ecosystems and the biodiversity that they support is not well understood or quantified, but we do know that we are wholly dependent on the services they provide (water treatment, air purification, climate regulation, etc). Alberta needs to quantify the value of ecosystem services and natural assets in order to have realistic cost-benefit analysis of coal development projects. Currently our financial accounting systems do not include the 'free' services provided by nature and so they are taken for granted. The United Nations adopted the System of Environmental Economic Accounting to provide consistency for how this should be done.

Recommendations

- Protect critical wildlife habitat and corridors, and endangered ecosystems from coal development (locate mines in areas that are not critical to wildlife, or part of an endangered ecosystem).

- Begin to incorporate ecosystem accounting into our financial systems and Impact Assessments.

Impacts on other Water Users and Sectors

Municipalities

Well over 132,000 people live directly downstream from two proposed coal mines undergoing regulatory review in the Oldman watershed, most of them in the City of Lethbridge, and Towns of Fort Macleod and Taber. The risk to their drinking water supply caused by a new coal mine(s) is difficult to estimate without more research into the effectiveness of coal mine wastewater treatment, and detailed computer modelling to predict how far downstream potential contamination could travel. Looking again to our neighbours in BC, it is concerning that Sparwood had to close down one of its groundwater wells because of selenium contamination from nearby coal mines. Water treatment plants along the

Oldman River are not currently equipped to remove selenium. Unlike British Columbia, Southern Alberta does not have other rivers or lakes nearby to draw water from, in the event that an alternative source is needed. The Oldman River is the only option for several municipalities, and as such, any who rely on it as a water source are particularly vulnerable to potential upstream contamination.

Agriculture

Downstream of these proposed mines is one of Canada's most valuable agricultural regions. Throughout the Oldman watershed, water is used for primary industries including the irrigation of specialty crops, food processing, and livestock production. Contamination of the water supply—or even a perception of dangerous or unhealthy water—would create a new and significant challenge for the agricultural industry, which is the foundation of our current economy. Farmers, irrigation districts, and taxpayers have invested hundreds of millions of dollars in agricultural infrastructure, research, and technology. If water contamination led to the loss of some agricultural production in Southern Alberta, this would have a negative impact on the livelihood of local residents, as well as the economy of Alberta, because irrigated agriculture is such a major contributor to the overall economy.

Recommendation

- Long term research, mine-scale testing, and stream monitoring must prove that coal mine wastewater treatment is effective for the long term (15-25 year life of a mine plus for decades after mine closure) before mining is approved, to ensure the water supply for municipalities and agriculture downstream will not be contaminated.

Reputational Risk

In addition to direct impacts on other sectors who depend on water, there are other more indirect risks that are difficult to quantify. For example, coal mining could result in lost opportunity costs for other types of land uses that are incompatible with coal mining, such as ecotourism or grazing. Additional coal mining in the Eastern Slopes could also deepen the perception that Alberta is an industrial province that is less welcoming to other types of economic development, and less interested in environmental conservation. These misconceptions may limit our economic diversity and/or population growth if people are not attracted to locate their businesses or families here. Environmental protection is a high priority for a growing number of workers, especially younger generations.

Recommendation

- Evaluate Alberta's potential reputational risks and lost opportunity costs of approving new coal mines, and use the results of the evaluation to assist with determining a new Coal Policy.

3. In light of points #1 and #2, what are your concerns about the current 1976 Coal Policy? Specifically:
    a. What elements of the 1976 Coal Policy need to be retained, changed or improved?
    b. What elements of the 1976 Coal Policy need to be eliminated?

Updating the 1976 Coal Policy

In order to address the recommendations we have made, new sections will need to be added to the new coal policy that the Government of Alberta develops. In addition to those made above, the following recommendations are specific to the 1976 Coal Development Policy for Alberta.

Retain

Environmental protection is the top concern of Albertans as we have seen in the results of the government's coal engagement survey. The OWC has also heard this same concern from our stakeholders, and in particular the protection

of water is the top concern we have heard. The 1976 Coal Policy includes strong language about environmental protection that should be retained, including (paraphrased for brevity):

- No development will be permitted unless the Government is satisfied that it may proceed without irreparable harm to the environment and with satisfactory reclamation of any disturbed land.
- Strict inspection and regulation for environmental protection.
- Approvals will only be granted where environmental standards and criteria are not exceeded.
- Full reclamation is assured, land will be productive and useful as it was in its original state.
- A detailed reclamation plan required before approval.
- There are areas where coal development is not the highest priority, and is not allowed.
- Exploration or development is not automatic, but subject to review and considered on its own merits.
- Inspections and field verification that regulations and conditions are being adhered to.
- Where lands are deemed unsuitable for coal development, the government will buy back leases/rights to protect the land from development.
- The Lieutenant Governor in Council approves large applications, which means Cabinet has approved and recommended it.
- A Cost-Benefit and Social Impact Analysis is required and reviewed by a cross Ministry committee of experts.
- Alberta Environment and Parks should be the lead agency for the Environmental Impact Assessment.
- The Minister of Environment can attach conditions to the permit, as well as the regulatory review body.

<u>Improve</u>

The following elements need to be improved within the new coal policy.

- The intent of the 1976 Coal Policy was clearly to involve the public throughout the regulatory review process. The policy includes language requiring that a public disclosure be made early on by coal developers so that people could prepare to participate in future public hearings and states that "For any major or environmentally sensitive development the Board will call a public hearing at which the views of any interested person will be considered" (page 34). The new coal policy should be equally inclusive, continue to require a public disclosure and allow Albertans to share their views at a public hearing. Participation should not be restricted to those deemed "directly affected", as Albertans own the resource and are affected. Limiting participation to those "directly affected" does not acknowledge downstream and downwind impacts, and does not give a voice to nature. The process should allow "any interested person" to share their views at a public hearing as the 1976 policy clearly states.

- The 1976 policy does not specifically discuss the critical need for a transparent, inclusive, accountable, and easily accessible regulatory system, and this should be added to the new policy. Albertans expect and deserve a system that is trustworthy and the key to trust is easily accessible information and opportunities to actively participate. We have seen instances where permits/licenses related to coal exploration were granted within days of application, leaving no time for Albertans to review and comment on them. It is also very difficult to find information about ongoing coal projects and more needs to be done to notify Albertans when an application has been made.

- Security deposits collected for reclamation are inadequate to cover the true costs of reclamation, leaving an unfair liability and potential hazard for taxpayers. The formula for calculating security deposits needs to be adjusted, and the funds need to be collected regularly and kept in trust for future reclamation. The recent report from the Auditor General clearly identified the issues and the recommendations made need to be implemented

quickly to rebuild trust in regulators. The Government of Alberta has announced a review of the Mine Financial Security Program and this is a good first step, but action needs to happen quickly as this has been a long standing issue and there are several reports completed already.

- Land classification categories are valuable to clearly define where coal development may be considered, and where coal mining will not be allowed. Also, without the 1976 categories it is unclear what the parameters are for determining when an open-pit mine—versus subsurface mine—may be allowed. A robust cumulative effects assessment that includes established scientific thresholds needed to maintain ecological function would identify high priority areas to conserve, and lower functioning areas that may be suitable for coal development.

- Biodiversity/habitat offsetting (restoring habitat somewhere else to make up for habitat that was destroyed) is not discussed in the 1976 policy and should be added to the new policy because it is a mechanism that is being used by developers. The new policy should clearly state:
    - That offsetting will only be used as a last resort if avoidance is impossible;
    - That offsetting will actually restore new habitat, and does not simply take advantage of existing habitat; and;
    - What the formula will be for calculating the amount of habitat to be restored, as in will it be a 1:1 formula, or will more habitat be restored than was destroyed?

<u>Eliminate</u>

With the creation of the Alberta Energy Regulator, many of the processes outlined in the 1976 policy have changed and need to be updated. Clarity around the process is important to build trust in the regulator. The updated process should clearly identify where Albertans have opportunities to participate and share their views.